

**REMARKS**

Claims 1-5 and 10-16 are in the present application. Reconsideration in view of the following remarks is kindly requested.

**Entry of Amendment Requested**

Applicants respectfully request entry of this amendment by the Examiner since it raises no new issues; and the claims as amended do not require any further consideration or search by the Examiner. Further, Applicants submit that, at the least, the amendment should be entered since it reduces the number of substantive and/or formal issues to place the application in better form for appeal.

**Claim Rejections - 35 U.S.C. § 103**

Claims 1, 2 and 10-12 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Braymen (USP 5,348,617), in view of EerNisse et al. (USP 5,022,130). This rejection is respectfully traversed.

Applicants respectfully submit that neither Braymen nor EerNisse et al. teach or suggest a method of producing an acoustic resonator device, comprising at least:

isolating said piezoelectric material by selectively removing some or all piezoelectric material not involved in signal transmission to reduce an amount of acoustic energy which propagates in a lateral direction away from the device,

in combination with the other recited features of claim 1,

The Examiner already admits that Braymen does not teach the isolating feature of claim 1 and 13, yet alleges that EerNisse teaches “isolating the piezoelectric device by removing some amount of the piezoelectric material to change the shape of the piezoelectric material and reduce the acoustic energy or the error caused by vibration frequency and achieve a certain frequency control (see col. 1, line 55 to col. 2, line 5). The Examiner further alleges that “the acoustic energy is vibration that propagates in a lateral direction away from the device.”

However, Applicants submit that the passages referred to by the Examiner are directed to modifying a gamma acceleration vector by “moving an active region of vibration or changing its

shape”. The passage continues that mass is added over a crystal to lower frequency, but that mass addition has not yet been used “to reduce the gamma vector”. See column 1, lines 16-24. This is the focus of EerNisse et al.

X ( There is no discussion of the selective removal of some or all piezoelectric material not involved in signal transmission to reduce an amount of acoustic energy which propagates in a lateral direction away from the device. In EerNisse et al., mass may be “moved” to reduce the gamma vector during the subsequent fabrication of resonators (see col. 2, lines 55-64), but no mass is actually selectively removed from the piezo layer (rather a mass location may be moved, but total mass remains the same—see col. 2, lines 60-61). For at least this reason, Applicants submit that the Examiner has failed to make out a prima facie case of obviousness, as the combination of Braymen and EerNisse et al. fail to teach all the features of claim 1. Withdrawal of the rejection of claims 1, 2 and 10-12 is kindly requested.

Notwithstanding the above, Applicants direct the Examiner's attention to two recent cases decided by the Court of Appeals for the Federal Circuit (CAFC), In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed.Cir. 1999) and In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed.Cir. 2000). Both of these cases set forth very rigorous requirements for establishing a prima facie case of obviousness under 35 U.S.C. §103(a). To establish obviousness based on a combination of elements disclosed in the prior art, there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant. The motivation suggestion or teaching may come explicitly from one of the following:

- (a) the statements in the prior art (patents themselves)
- (b) the knowledge of one of ordinary skill art, or in some cases,
- (c) the nature of the problem to be solved.

See Dembiczak 50 USPQ at 1614 (Fed.Cir. 1999). In Kotzab, the CAFC held that even though various elements of the claimed invention were present (in two separate embodiments of the same prior art reference), there was no motivation to combine the elements from the separate embodiments, based on the teachings in the prior art.

In order to establish a prima facie case of obviousness under 35 U.S.C. §103(a), the Examiner must provide particular findings as to why the two pieces of prior art are combinable. See Dembiczak 50 USPQ2d at 1617. Broad conclusory statements standing alone are not "evidence".

In order to provide motivation for combining EerNisse et al. with Braymen, on page 4 of the Office Action, the Examiner asserts:

It would have been obvious . . . to have modified the method of Braymen by including the step of isolating the piezoelectric material, as taught by EerNisse, to positively control the frequency of the device by reducing the frequency caused error.

Applicants have read the entirety of EerNisse et al. and Braymen and do not see how reading these references one of ordinary skill in art would think to combine EerNisse et al. with Braymen. Accordingly, Applicants respectfully submit that claims 1, 2 and 10-12 are allowable for at least the reason that the Examiner has failed to establish a proper prima facie case of obviousness under 35 U.S.C. 103(a) in view of Dembiczak and Kotzab.

The Examiner is using impermissible hindsight reconstruction to reject the claims. The Examiner has used the present application as a blueprint, selected a prior art etching process as the main structural device, and then searched other prior art for the missing elements without identifying or discussing any specific evidence of motivation to combine other than providing conclusory statements regarding the knowledge in the art, motivation and obviousness. The Federal Circuit has noted that the PTO and the courts "cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention," In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1780, 1783 (Fed. Cir. 1988), and that the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight. Dembiczak, 50 USPQ2d at 1617. For at least this additional reason, Applicants submit that the rejection of claims 1, 2 and 10-12 should be withdrawn.

The Examiner has not provided the requisite evidence to support his allegation that there is motivation to combine the EerNisse et al. with Braymen, so as to render obvious that which Applicants have described in claims 1, 2 and 10-12. The essential factual evidence on the issue of obviousness is set forth in Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966) and extensive ensuing precedent. The patent examination process centers on prior art and the analysis thereof. When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. See, e.g., McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001) ("the central question is whether there is reason to combine [the] references," a question of fact drawing on the Graham factors).

The Examiner has not provided the requisite showing of a suggestion, teaching, or motivation to combine the EerNisse et al. with Braymen to reject claims 1, 2 and 10-12 in the present application. "The factual inquiry whether to combine references must be thorough and searching." Id. It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. See, e.g., Brown & Williamson Tobacco Corp. v. Philip Morris Inc., 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) ("a showing of a suggestion, teaching, or motivation to combine the prior art references is an 'essential component of an obviousness holding'" (quoting C.R. Bard, Inc., v. M3 Systems, Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998))); In re Dembiczak, 50 USPQ2d at 1617 ("Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references."); In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998) (there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant); In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) ("teachings of references can be combined only if there is some suggestion or incentive to do so.") (emphasis in original) (quoting ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). For at least these additional reasons, the

rejection fails.

The Examiner has not adequately supported the selection and combination of EerNisse et al. with Braymen to render obvious that which Applicants have described. The Examiner's conclusory statement "to positively control the frequency of the device by reducing the frequency caused error" do not adequately address the issue of motivation to combine. This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." W.L. Gore v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983).

The Examiner must explain the reasoning behind his findings of motivation. Simply stating that combining EerNisse et al. with Braymen "to positively control the frequency of the device by reducing the frequency caused error" is an insufficient explanation for the alleged combination. Withdrawal of the rejection of claims 1, 2 and 10-12 for this additional reason is kindly suggested.

Further, the Examiner is reminded that deferential judicial review under the Administrative Procedure Act does not relieve the agency (in this case the USPTO) of its obligation to develop an evidentiary basis for its findings. To the contrary, the Administrative Procedure Act reinforces this obligation. See, e.g., Motor Vehicle Manufacturers Ass'n v. State Farm Mutual Automobile Ins. Co., 463 U.S. 29, 43 (1983) ("the agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'") (quoting Burlington Truck Lines v. United States, 371 U.S. 156, 168 (1962)). In this respect, since the Examiner has not provided the requisite suggestion in the references to make his alleged combination, the Examiner rejects the precedent in In re Sung Lee, 23 USPQ2d 1780 (Fed. Cir. 2002).

In its decision on Lee's patent application, the Board rejected the need for "any specific hint or suggestion in a particular reference" to support the combination of the Nortrup and Thunderchopper references. Omission of a relevant factor required by precedent is both legal error and arbitrary agency action. See Motor Vehicle Manufacturers, 463 U.S. at 43 ("an agency

rule would be arbitrary and capricious if the agency . . . entirely failed to consider an important aspect of the problem"); Mullins v. Department of Energy, 50 F.3d 990, 992 (Fed. Cir. 1995) ("It is well established that agencies have a duty to provide reviewing courts with a sufficient explanation for their decisions so that those decisions may be judged against the relevant statutory standards, and that failure to provide such an explanation is grounds for striking down the action."). As discussed in National Labor Relations Bd. v. Ashkenazy Property Mgt. Corp., 817 F.2d 74, 75 (9th Cir. 1987), an agency is "not free to refuse to follow circuit precedent." Applicants submit that the Examiner has failed to provide a specific hint or suggestion in any of Braymen or EerNisse et al. to support the alleged combination. Withdrawal of the rejection and allowance of each of claims 1, 2 and 10-12 is therefore earnestly solicited.

Claims 3-5 and 13-16 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Brayman and EerNisse et al. in view of Ruby et al. (5,873,153). This rejection is respectfully traversed.

Applicants submit that none of Braymen, EerNisse et al. nor Ruby et al. teach or suggest a method of isolating an acoustic resonator device, comprising at least:

removing some or all piezoelectric material not involved in signal transmission after device fabrication to limit lateral propagation losses to un-etched regions of the device, thereby limiting propagation of energy in lateral modes,

in combination with the other recited features of claim 13. The Examiner cites Ruby et al. for an alleged teaching of isolating resonator frequencies after fabrication of a device, as well as an alleged teaching of backfilling voids formed in piezoelectric material. However, Applicants submit that Ruby et al. does not cure the numerous deficiencies in either Braymen nor EerNisse et al. that have been set forth above in the discussion of claim 1. Accordingly, for at least this reason, Applicants submit that dependent claims 3-5 and 13-16 are allowable.

### **CONCLUSION**

In view of the foregoing, Applicants submit that claims 1-5 and 10-16 are in condition for allowance. Early and favorable notice to that effect is respectfully solicited.

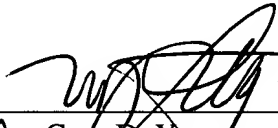
In the event that any matters remain at issue in the application, the Examiner is invited to contact Matthew J. Lattig at (703) 390-3030 in the Northern Virginia area, for the purpose of a telephonic interview.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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